

MISSOURI CONSERVATIONIST

VOLUME 80, ISSUE 4, APRIL 2019
SERVING NATURE & YOU



ENJOY NATURE ANYTIME!

Finding places to discover nature in Missouri is easy with the new, free mobile app — **MO Outdoors**. Users can quickly find MDC places close to home for birdwatching, fishing, hiking, camping, or hunting, and still have time to get home to make a warm and hearty meal.



DISCOVER NATURE



Serving nature and you®

Moroccan spiced-braised venison

Serves 2 to 4

- 3 tablespoons extra-virgin olive oil
- 2 pounds venison round steak
- Salt and coarsely ground pepper
- 1 teaspoon cardamom seeds
- 1 teaspoon cumin seeds
- 1 lemon, cut thinly into 8 to 10 slices
- 4 medium garlic cloves, sliced
- 1 medium onion, chopped
- 1 4-ounce jar chopped pimentos or 1 red bell pepper
- 1 tablespoon dried pepper flakes (preferably ancho)
- ½ cup prunes, pitted
- 1 cup chicken stock
- 1 15-ounce can diced tomatoes

In a 4-quart cast-iron pot, heat olive oil over medium heat. Salt and pepper steaks on both sides and add to hot oil. After first side is browned, turn over and add cardamom and cumin seeds to the oil around meat, and stir to heat seeds thoroughly. Add lemon, garlic, onion and pimentos and stir. Cook until onion is softened. Add pepper flakes, prunes, stock and tomatoes. Turn meat over, stir thoroughly and cover with lid. Simmer atop burner for 2 to 3 hours until meat is tender.

Place meat on a heated platter and cover. Skim fat from pot and bring contents to a boil to reduce liquids. Season to taste and pour over venison.

Serve with couscous or saffron rice and your favorite bold red wine.

Find more wild recipes in *Cooking Wild in Missouri*. Order yours at mdcnatureshop.com.



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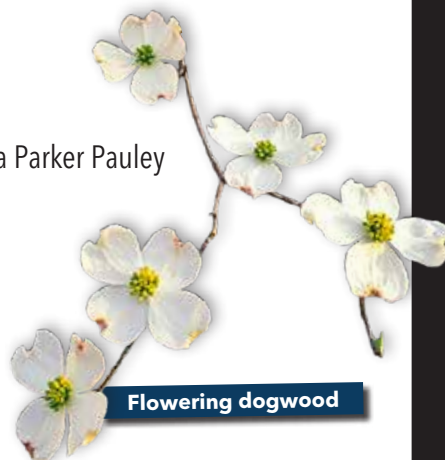
Poachers push Missouri's wild reptiles closer to the edge of existence.

by Bonnie Chasteen



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MISSOURI CONSERVATIONIST



ON THE COVER

Peregrine falcon

📷 **NOPPADOL PAOTHONG**

70-200mm lens, f/5.6
1/640 sec, ISO 800

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Letters to the Editor

Submissions reflect readers' opinions and may be edited for length and clarity. Email Magazine@mdc.mo.gov or write to us:

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MO TO WYOMING

Just wanted to tell you how much I enjoy your magazine. After reading it, I send it to my grandson in Wyoming so he can keep in touch with home.

Barb Balota
Arnold

JOURNEY WITH SCHOOLCRAFT

From the beautiful cover photo to the outdoor calendar, I thoroughly enjoyed the entire February 2019 issue of the *Missouri Conservationist*. After 35 years away from Missouri, I moved back in late 2014, resubscribing to the magazine as soon as I got settled. I did so not only to update my knowledge regarding conserving or restoring natural areas in my neighborhood, but also to learn about conservation areas and parks I can visit for short (or longer) hikes — my way of getting frequent doses of outdoor medicine. How I wish I had the stamina to take on the Schoolcraft trail [*Schoolcraft: A Journey Through Southern Missouri*, Page 10], but I am certainly going to look up some of the featured points of his trek the next time I am near portions of the trail and will move visiting Smallins Cave up several positions on my to-do list. We will be trying the venison fajitas and looking for Ozark witch-hazel soon.

Mary Jones via email

I thoroughly enjoyed Brian Flowers' and Francis Skalicky's article on Henry Schoolcraft's journey through the interior of Missouri and Arkansas. Fascinating information. I realize now why Hwy. 65, which runs north and south on the eastern side of Springfield, is also known as Schoolcraft Freeway. A wonderful and thoroughly delightful article, in keeping with the extraordinary professionalism of this publication. Four generations of our family have enjoyed this magazine.

Brenda Wrather Springfield

Thank you for the informative article about Schoolcraft. I had been searching for a map of



Henry Rowe Schoolcraft

Schoolcraft's journey, and it was in the *Missouri Conservationist*! Keep up the great work about our great state.

Bonnie Carter Bucyrus

Just finished reading the February issue. I thought it was the best one yet. Really enjoyed the article on Henry Schoolcraft and the precious picture of the squirrel on the cover.

Leslee Jacobson via email

WINTER TROUT

How lucky we are in the state of Missouri to have such a wonderful Conservation Department. The *Conservationist* is so well-done and the pictures are unbelievable. I look forward to receiving it and then passing it on to others.

As a lifelong fisherman, the winter trout program has been a blessing. The need to travel hours has been greatly reduced and to be able to fish during cold weather months has reduced the "itch" tremendously.

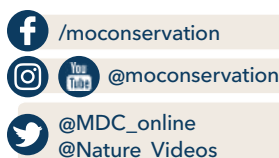
Sonny Brady via email

THANKS FOR THE MEMORIES

Your article [*Up Front*, February, Page 3] reminded me of my younger days when I would purposely not overindulge on New Year's Eve, so I could go out the first day of the new year to enjoy the first sunrise with my bird dog. Sitting down at the base of a tree, I would feed my dog a breakfast sandwich and revel in the glow of the first sunrise and the promise that it provided. Hearing ducks and geese in the distance as they prepared for their morning mission to neighboring fields. I was always asked how successful my hunting was and my response was always the same — mission accomplished. My dogs are passed now, and I only get to enjoy the warmth of their memories. I occasionally get to go out with my son and his children. Most important is being out there with my children, occasionally finding game, getting a shot or two, and maybe harvesting a bird or two. But mostly being out there.

Mickey Cruse via email

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Share your photos on Flickr at
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email Readerphoto@mdc.mo.gov,
or include the hashtag #mdcdiscovernature
on your Instagram photos.



1

1 | Wild turkeys
by **tysonstark**,
via Instagram

2 | Opossum
mother by
**Katherine
Barber**, via
MDC website

3 | Shooting
star by
mygrandpajim,
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2



3

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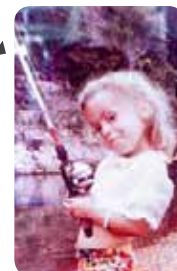


Up Front

with Sara Parker Pauley

✱ Last year at a national conference, I heard an impressive young man from Harlem share his story about how he first fell in love with the outdoors. It wasn't what I was expecting. He said it all began in Central Park in the heart of New York City. Here he first learned how to fish with the help of several older men planted on a nearby park bench who would call out advice to the novice anglers. His love of the outdoors was born in that busy place.

Memories of the first catch are powerful. In this photo of my first fishing memory at age 3, I'm looking pretty smug at the camera because my brothers, who had "hogged" the only extra rod for what seemed like a lifetime that day, finally had to share with their kid sister. It was my turn now. And on Swan Creek in southwest Missouri, my thrill of fishing first took hold and still runs strong today.



One doesn't have to travel to the heart of the Ozarks for a great fishing experience in Missouri. MDC offers bountiful fishing opportunities in our urban areas and has been doing so for half a century (see *50 Years of Urban Fishing in St. Louis* on Page 10). This past February, it made me smile to see the story of two friends fishing in Forest Park in the heart of St. Louis when one hooked a 26-inch rainbow trout, stocked through MDC's urban winter trout program. It was only his second time fishing. My guess is he will be hooked for life.

Sara Parker Pauley

SARA PARKER PAULEY, DIRECTOR
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The *Missouri Conservationist* (ISSN 0026-6515) is the official monthly publication of the Missouri Department of Conservation, 2901 West Truman Boulevard, Jefferson City, MO (Mailing address: PO Box 180, Jefferson City, MO 65102.) **SUBSCRIPTIONS:** Visit mdc.mo.gov/conmag, or call 573-522-4115, ext. 3856 or 3249. Free to adult Missouri residents (one per household); out of state \$7 per year; out of country \$10 per year. Notification of address change must include both old and new address (send mailing label with the subscriber number on it) with 60-day notice. Preferred periodical postage paid at Jefferson City, Missouri, and at additional entry offices. **POSTMASTER:** Send correspondence to Circulation, PO Box 180, Jefferson City, MO 65102-0180. Phone: 573-522-4115, ext. 3856 or 3249. Copyright © 2019 by the Conservation Commission of the State of Missouri.

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Printed with soy ink



mdc.mo.gov 3

Nature LAB

by Bonnie Chasteen

Each month, we highlight research MDC uses to improve fish, forest, and wildlife management.

FISHERIES MANAGEMENT

Paddlefish Tagging Project

✳ Justin Penrod snags for paddlefish in Table Rock Lake, Harry S. Truman Reservoir, and Lake of the Ozarks. “They can move fast,” he said.

Penrod is one of many anglers who has caught and reported tagged paddlefish during MDC’s five-year statewide paddlefish tagging project.

MDC’s Big Rivers and Wetlands Field Station in Cape Girardeau leads the effort and collaborates with fisheries management biologists and Southeast Missouri State University (SEMO) graduate students. Their goal is to look at paddlefish harvest and movement, while interacting with recreational and commercial anglers.

Project partners are amazed to learn how far and fast paddlefish can travel. “Some of the fish we tagged in the reservoirs are caught in the Missouri and Mississippi rivers and their tributaries, some as far as 1,000 miles away,” MDC Fisheries Technician and SEMO graduate student Dustin Broadus said.



Jaw bands help partners document paddlefish movement and harvest information.



Inset: Fisheries Management Biologist Shane Bush releases a tagged paddlefish on Table Rock Lake.

Five-year effort helps partners learn more about paddlefish and improve management

Recreational and commercial fishermen in many other states have caught and reported paddlefish that were tagged in Missouri. “We were surprised to see the amount of recreational harvest on the rivers, too,” SEMO grad student Thomas Devine said.

Partners found that both recreational and commercial anglers are interested in where the fish come from and move. Most anglers were just as happy to get the information about the fish they caught as they were to get a reward for reporting their tags, partners said.

The project’s information will help partners throughout the paddlefish’s range improve management, ensuring anglers will have plenty of snagging opportunities for generations to come.

Paddlefish Tagging at a Glance

Partners

- ✳ MDC
- ✳ Southeast Missouri State University
- ✳ Recreational and commercial anglers
- ✳ Many state and federal agencies and universities outside Missouri

Number of Paddlefish Tagged

A little over 1,600 on the rivers and almost 6,000 on the reservoirs

Number Reported Tagged

Around 60 harvested on the river and just over 1,000 harvested on the reservoirs

Longest Migration Detected

1,466 miles

Number of paddlefish reported tagged



In Brief



MORE THAN 9,300 FERAL HOGS ELIMINATED IN 2018

MDC, PARTNERS, LANDOWNERS
WORKING TOGETHER

➔ Through trapping and targeted shooting, MDC, working with private landowners and its partner agencies, including agricultural and conservation groups, eliminated 9,365 feral hogs from Missouri's landscape in 2018. This is an increase from 2017 when 6,561 hogs were removed.

"Feral hogs are a destructive, invasive species that don't belong here. They're not a native species," said Mark McLain, MDC Feral Hog Elimination Team leader. "They out-compete native wildlife for habitat and food. For example, places with a lot of feral hogs will see their wild turkey and deer populations diminish."

McLain said feral hogs are known to carry diseases, such as swine brucellosis, pseudorabies, trichinosis, and leptospirosis, that could possibly spread to humans, pets, and livestock. He hopes the message that hunting is not an effective method for eliminating feral hog populations is starting to be better understood across Missouri.

"For over 20 years, unregulated hunting of feral hogs was allowed in Missouri, during which time our feral hog population expanded from a few counties to over 30 counties," he said.

In 2017, MDC, the Corps of Engineers, and the LAD Foundation established regulations against feral hog hunting on lands owned and managed by these three organizations. Other agencies have passed regulations similar to MDC's to eliminate hog hunting on land they own.

Feral hogs have expanded their range in the U.S. from 17 to 38 states over the past 30 years. Their populations grow rapidly because feral hogs can breed any time of year and produce two litters of one to seven piglets every 12 to 15 months.

To report feral hog sightings or damage, visit mdc.mo.gov/feralhog.

CELEBRATE MISSOURI TREES DURING ARBOR DAYS IN APRIL

Celebrate the value of Missouri trees and forests by planting native trees and practicing proper tree care during Arbor Days in April.

Missouri Arbor Day is Friday, April 5. Missouri has been observing the state's official Arbor Day on the first Friday in April since 1886 when the General Assembly declared that day be set aside for the appreciation and planting of trees. National Arbor Day is recognized on the last Friday of April, which is April 26 for 2019.

Get information on backyard tree care, including types of trees for urban and other landscapes, selecting the right tree for the right place, planting tips, watering and pruning info, and more, at mdc.mo.gov/tree-health.

The George O. White State Forest Nursery near Licking offers residents a variety of low-cost native tree and shrub seedlings for reforestation, windbreaks, erosion control, and wildlife food and cover. Orders are accepted from Nov. 1 to April 15 every year. For more information, visit mdc.mo.gov/seedlings.

The nursery is hosting an open house and tours on Saturday, April 6, from 9 a.m. to 2 p.m. Stop by to see how nursery staff grows, stores, and ships more than 3 million seedlings each year. Tours are by appointment. Call 573-674-3229 to make a reservation.

🌲 Did you know? Missouri forests cover about one-third of the state and provide outdoor recreation, wildlife habitat, natural beauty, and watersheds for streams and rivers. Spending time in Missouri forests can provide natural health benefits, too. Exposure to nature contributes to your physical well-being, reducing your blood pressure and heart rate, relieving stress, and boosting your energy level. Get more information at mdc.mo.gov/forest.



NEW PUBLICATION AVAILABLE

Discover and explore Missouri's world-class natural diversity. Our new 24-page, full-color booklet showcases the beauty and value of Missouri's natural communities. Maps help you know where to find them and tips help you do more to conserve them. Free to Missouri residents.

To order, email Show-Me.Natural.Communities@mdc.mo.gov and your mailing address to pubstaff@mdc.mo.gov.

Ask MDC

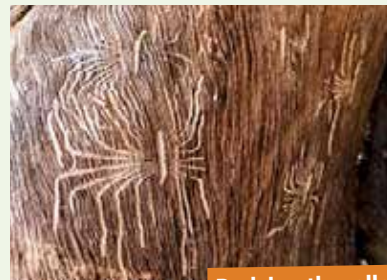
Got a Question for Ask MDC?

Send it to AskMDC@mdc.mo.gov
or call 573-522-4115, ext. 3848.

Q: What sort of insect creates these tunnels, and why is there a large central corridor? The "legs" look almost symmetrical.

➔ These galleries were made by tiny bark beetles, most likely in the genus *Scolytus*.

A bark beetle gallery is formed when a female beetle bores into a tree, excavates a wide central gallery, and lays eggs along the edge. When the eggs hatch, the larvae begin feeding, creating their own galleries opposite the central gallery. The excavations get wider as the larvae travel farther and grow larger. Some galleries are quite short, presumably because the larvae in those died or were eaten. When the larvae finish their feeding, they pupate and become adult beetles, chewing their way through the bark and leaving small exit holes. In an infested tree, you can see many tiny holes. As the bark falls away, these neat galleries are revealed.



Bark beetle gallery

Q: In the spring, we feed Baltimore orioles for several weeks. Why don't they return in the fall on their return home?

➔ We likely don't see as many Baltimore orioles, or other migrant birds, in autumn for a few reasons, according to State Ornithologist Sarah Kendrick.

"After the breeding season and raising their young, orioles may not be as desperate for feeder foods that we put out for them. There is an abundance of natural autumn food sources, like ripened berries, that weren't necessarily available when they first arrived in the spring," Kendrick noted.

It's also important to note many birds on their spring journeys north have just traversed the Gulf of Mexico, the Caribbean, or other land masses. After making these exhausting, nonstop flights, it's common for flocks of hungry birds to show up at feeders in large groups. Look for Baltimore orioles in mid-April.

There is much we don't know about many species' migratory routes, particularly small songbirds, due to their size and difficulty in attaching long-term tracking technology. Researchers do know some species take different routes in the spring and fall, likely due to weather and food availability.



Great spangled fritillary

Q: This butterfly is rather friendly. It flies up to me and sits on the nearby flowers as I am watering. Is this a great spangled fritillary?

➔ Yes. A common breeding resident of Missouri, great spangled fritillaries (*Speyeria cybele*) like moist, open areas like fields, prairies, and woodlands. They often visit city yards in search of gardens and flowers.

As caterpillars, they feast on various violet (*Viola*) species at night and hide during the day. As adults, they sip nectar from many species of flowers, including milkweeds,

thistles, ironweed, bergamot, and purple coneflower. To obtain the nutrients and moisture they need, these butterflies also visit carrion, animal droppings, and mud puddles.

Males patrol open areas for females. This species lays eggs in late summer on or near host violets, but the newly hatched caterpillars do not feed on the plants. Instead, they overwinter until spring and then eat new leaves that grow as the weather warms.

Great spangled fritillaries have a single generation each year, with adults flying from mid-May to early September.



Lucas McClamroch

BOONE COUNTY
CONSERVATION AGENT

offers this month's

AGENT ADVICE

Spring turkey season opens April 15. Not only are turkey hunters out trying to bag a bird, but mushroom hunters are out looking for those springtime delicacies — morels. Always be mindful of all resource users. Though hunter orange is not required when turkey hunting, it is a good idea, especially when you are moving in and out of the woods. Never wear colors that resemble a turkey, especially red, white, blue, or black. Should you bag a bird, wrap it in orange to transport it out of the woods. Always shout to make your presence known to a fellow hunter. A safe hunting day is a good hunting day. For more information on the 2019 spring turkey season, visit short.mdc.mo.gov/ZZf.

What IS it?

Can you guess this month's natural wonder?

The answer is on
Page 9.



INVASIVE SPECIES

ZEBRA MUSSELS

Invasive nonnative species destroy habitat and compete with native wildlife. Do what you can to control invasive species when you landscape, farm, hunt, fish, camp, or explore nature.

What Is It?

Introduced in North American waterways through international shipping, zebra mussels were discovered in Lake St. Clair near Detroit. Since then, they have spread rapidly throughout the Great Lakes and connected waterways of the Mississippi River. Zebra mussels were first reported in Missouri in 1991.

Where Is It?

Zebra mussel's range is spreading. Currently, they are found in Missouri reservoirs, including Lake of the Ozarks, Bull Shoals Lake, Lake Taneycomo, Lake Lotawana, and Smithville Lake. They are also in several rivers, including the Osage (below Bagnell Dam), Missouri, Mississippi, and lower Meramec.

Why It's Bad

Zebra mussels have tremendous reproductive capabilities, producing as many as 1 million eggs per year. They gather in densities of 30,000–40,000 per square meter and cover any surface available. They starve and suffocate native mussels by attaching to their shells and surrounding habitat, decimating native species in many areas. Zebra mussels filter plankton from the water, reducing this basic food source for aquatic life. They can clog power plants and public drinking water systems, foul boat hulls, and impact fisheries.

Economic impacts of zebra mussels in North America during the next decade are expected to be in the billions of dollars.

How to Control It

No one has found a way to rid infested waters of zebra mussels, but by following these “clean boating” tips, you can help prevent further spread:

Inspect — Thoroughly inspect your boat before leaving the water and remove any weeds, mussels, or debris.

Drain — Drain any water from your vessel.

Dump — Trash leftover bait on land, away from water, before leaving any water body.

Rinse — Thoroughly rinse and dry your boat either by hand or at a do-it-yourself carwash.

Dry — Boats, motors, and trailers should be allowed to dry thoroughly in the sun for at least five days before boating again.

In the Slip — In infested waters, the best way to keep a hull mussel-free is to run the boat frequently. Leave outboards or outdrives in the up position. Periodically inspect hulls and drive units.



Zebra mussels are fingernail-sized, black-and-white striped bivalve mollusks native to the Caspian Sea region of Asia.



Thoroughly rinse and dry your boat either by hand or at a do-it-yourself carwash.

To learn more, visit short.mdc.mo.gov/Zcz

PARTNERSHIPS PAY OFF FOR QUAIL MANAGEMENT

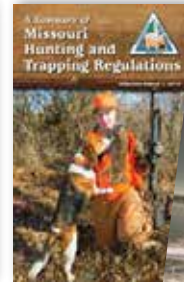
Good habitat remains a key component in building quail numbers. Good partnerships among landowners and conservation agencies are key to creating that habitat.

For more than a decade, private landowners in Carroll and Knox counties, MDC, and Quail Forever have partnered to rebuild habitat for this iconic bird, resulting in some of the highest known quail densities in Missouri in nearly 40 years.

Fall quail numbers in portions of the partnership effort at Bee Ridge Quail Restoration Landscape (QRL) in Knox county reached one bird per 2 acres in both 2017 and 2018 while populations in the 2C QRL in Carroll County reached one bird per acre during the same time. This equates to about five and 10 coveys per 100 acres, respectively.

Most other managed areas in the state average one bird per 3 acres or less. This equates to about three or fewer coveys per 100 acres.

For help with managing land for quail and other wildlife, contact your local MDC office or private land conservationist. Find them at short.mdc.mo.gov/ZoF.



NEW REGULATION BOOKLETS

MDC has updated information available for hunters, trappers, and anglers.

The *2019 Spring Turkey Hunting Regulations and Information*, *Summary of Missouri Hunting and Trapping Regulations*, and *Summary of Missouri Fishing Regulations* booklets are available for free at regional offices, nature centers, and locations where permits are sold. They are also available online at short.mdc.mo.gov/ZZf and short.mdc.mo.gov/Zq3.

You can also pick up the *Wildlife Code of Missouri* at these same locations or view it online at short.mdc.mo.gov/ZJ8.

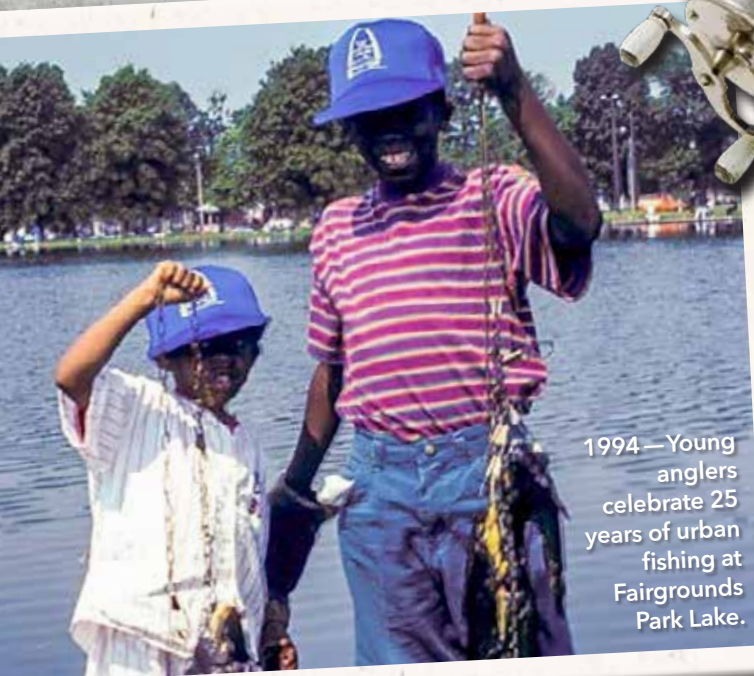
These handy booklets have information on permits, seasons, species, regulations, limits, conservation areas, sunrise and sunset tables, and more.

WHAT IS IT? FALSE MORELS

False morel caps resemble a brain – they have lobes, folds, flaps, or wrinkles. They may be black, gray, white, brown, or reddish. Their caps bulge outward instead of being pitted inward like a true morel. False morel stalks are stuffed with a cottony white tissue. True morels are completely hollow. True morels are only found in spring, while false morels are found in spring, summer, and fall. Most importantly, false morels are poisonous.




50 Years of URBAN FISHING in St. Louis



1994—Young anglers celebrate 25 years of urban fishing at Fairgrounds Park Lake.

BORN AS AN EXPERIMENT, THIS PROGRAM HAS BROUGHT FISHING HOME TO CITY FOLKS FOR FIVE DECADES

by Dan Zarlenga

A man wearing a white short-sleeved shirt, white shorts, a white fedora-style hat, and sunglasses is fishing. He is standing on a grassy bank next to a concrete pier. He is holding a fishing rod and reel. A black bag is slung over his shoulder. The background is filled with lush green trees and a wooden fence. The water is calm and reflects the surrounding greenery.

Angler enjoys a beautiful
day at Island Lake in
Suson Park in south
St. Louis County.

PHOTOGRAPH BY
DAVID STONNER



1969 *One Small Step*

Gas was 35 cents a gallon, and a home, \$15,000. That summer, 40,000 flower children bloomed on an upstate New York dairy farm during an epic festival of music and love. An American astronaut became history's first human to plant foot on the soil of another world.

America was also still reeling from a violent 1968. That year's assassination of Dr. Martin Luther King Jr. drew the passions of thousands, and it provoked outbursts in some that erupted into violence in 11 major cities. War was escalating in Vietnam and young men ages 18–26 were bracing for the December '69 draft lottery.

Tension in the nation's cities was wound taut. Even as Neil Armstrong made his giant leap for mankind, the U.S. government was taking the first step in an experiment to see if the fishing pole could prove mightier than the sword.

Could bringing fishing to troubled urban areas help steer energies in a more productive direction? That's what an untried initiative created by the U.S. Bureau of Sport Fisheries and Wildlife (later the U.S. Fish and Wildlife Service) set out to answer. It was the Urban Fishing Program.

Just six U.S. cities were selected to be part of a pilot program that would involve stocking urban lakes with fish to provide close-to-home angling opportunities for city dwellers. One of those cities would be St. Louis, with cooperation from MDC and the St. Louis Parks and Recreation Department.

Hardy, nongame fish, such as common carp, bullheads, and bowfin, were gathered in Minnesota, North Dakota, and Wisconsin. Federal staff trucked the fish to lakes in the program cities. The lakes in St. Louis were originally built in the early 1900s, mainly to decorate city parks. Sustaining healthy fish populations was never part of their design.

"These lakes weren't good habitat, so they had to get tough fish," said Kevin Meneau, MDC Fisheries management biologist. Meneau has supervised the Urban Fishing Program for St. Louis

City and County since 1986. He said despite the odds stacked against it, the program proved popular with city residents right from the start, and the fish were usually caught quickly.

Of all the pilot cities, the nascent Urban Fishing Program found by far its greatest success in the Gateway City.

Federal staff conducted a two-year user survey that showed 70 percent of the entire fishing hours for all cities in the program combined took place in St. Louis.

The first step had been taken. The time was right for a giant leap.

1972 *Changing of the Guard*

In 1972, a significant change took place with the Urban Fishing Program. The federal government handed the reins over completely to MDC.

Despite the initial success, MDC's Fisheries staff recognized the need for changes. Fish stocking schedules had previously been inconsistent, sometimes at intervals of three months or more. During these longer stretches, fish would typically be caught within the first 10 days, leaving anglers long periods with little fishing success.

MDC Fisheries biologists sought commercial channel catfish hatcheries to increase the supply and consistency of fish stock in the urban lakes.



1969

The U.S. Bureau of Sport Fisheries and Wildlife launches the Urban Fishing Program in six U.S. cities, including St. Louis.

1972

The federal government turns the program over to MDC. Scheduled stocking of commercial channel catfish begins, allowing for a more consistent fish supply.

“Since the commercial hatcheries raise those fish on-site, you can determine the sizes and amounts you want and have that lined out on a regular schedule,” Meneau said. Fish stockings began taking place on a more consistent rotation.

Biologists began to eventually transition out the wild caught, nonsport fish and shift more emphasis to hatchery-produced channel catfish. This provided better control over the process, making it much easier to keep quality and quantity of fish at the level required by ever-growing angler demand.

With better quality and consistency achieved, it was now time to grow.

1976 *A Design for Expansion*

It was a landmark year for the Missouri Department of Conservation. The citizens of the state passed by popular vote the *Design for Conservation*, a one-eighth-of-one-percent sales tax creating dedicated funding to support conservation efforts in Missouri. It provided the boost needed to help grow the Urban Fishing Program.

MDC Fisheries staff now had the resources to expand the program into St. Louis County. The cities of Ferguson and Ballwin, and several parks in the St. Louis County Parks and Recreation Department, came forward to participate.

Eventually, the Urban Fishing Program would total 17 lakes in the St. Louis area. Starting in 1978, MDC added Kansas City to the program, ultimately developing 11 lakes in that city as well.

Now, metro anglers in both of Missouri’s largest municipalities had an urban fishing program of their own.

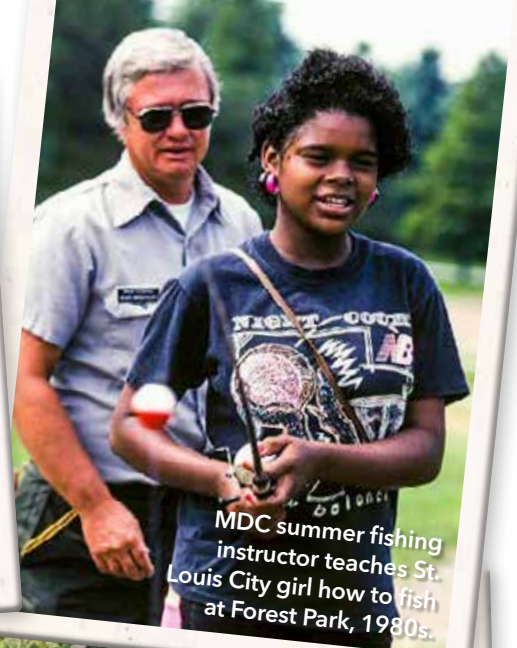
1989 *The Trout Transformation*

The urban fishing lakes were enthusiastically used by St. Louis City and County residents every spring through fall, but there was a distinct drop in interest during the winter months. In fact, fishing from November through February was practically dead. Meneau, who by this time was overseeing the St. Louis program, came up with an idea.

“I thought, why don’t we just bring in some trout,” Meneau said. He reasoned that being coldwater fish, rainbow trout should survive winter temperatures with no problem, and anglers would catch them as quickly as they had other fish before the weather warmed up again.



1992 — Carp Lake at Suson Park



MDC summer fishing instructor teaches St. Louis City girl how to fish at Forest Park, 1980s.



1995 — Parade entry expressing appreciation for the winter trout program at January-Wabash Park Lake.

To test the idea’s potential, Meneau proposed and was granted a pilot program for St. Louis City’s Wilmore Park and Suson Park in St. Louis County. Would urban anglers embrace the chance to catch trout? The answer came in no uncertain terms during the first rainbow trout stocking at Wilmore Lake.

“When we showed up that morning, there were so many people we couldn’t even get the hatchery truck into the park,” recalled Meneau. “Vehicles were parked on both sides throughout the entire park, from the lake all the way out to Chippewa Street.”

After finally getting enough vehicles moved to pull the truck through, anglers crowded in shoulder to shoulder, two persons deep, to have their chance at the newly stocked rainbows.

“It was like a trout park,” Meneau said.

An angler creel survey taken during the 1990–1991 season confirmed this success. The winter trout lakes were getting 1,700 hours of fishing use per acre in four months. Analysis of trout permit sales by zip codes uncovered a 33 percent spike in areas with winter trout lakes during the winter stocking period.

1976

The *Design for Conservation* passes, allowing for expansion of the Urban Fishing Program.

1978

The Urban Fishing Program expands to more St. Louis county lakes, as well as to Kansas City.

1989

In an effort to boost urban fishing in winter, trout stocking begins in two St. Louis City lakes and shortly after, in Kansas City.



MDC fisheries staff have stocked urban lakes with trout since 1989 — a service that continues today.

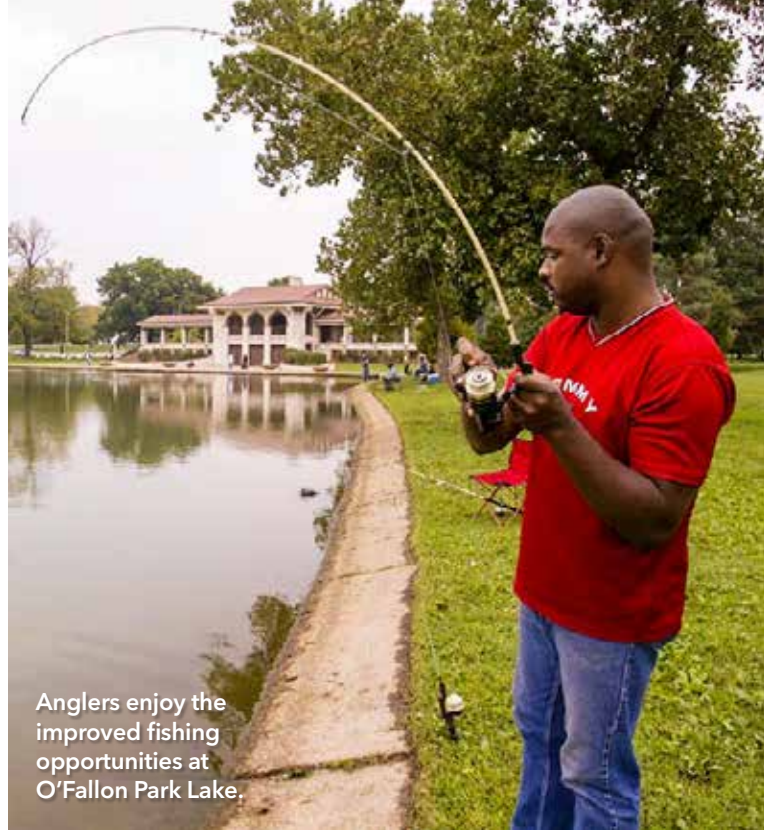
Winter trout stocking also took hold in Kansas City shortly after St. Louis. In 1993, the winter trout program expanded to lakes in north and west St. Louis County, Forest Park, O'Fallon Park, and the August A. Busch Memorial Conservation Area in St. Charles. By the end of the 1990s, winter trout could be found in 10 other urban lakes throughout Missouri.

"It was just hands down, slam dunk, insanely popular," remembered Meneau. "And to this day it's still the most popular program I've ever worked with."

1996 *Self-Sustaining Urban Fisheries are Born*

As noted previously, these urban lakes were not ideal habitat to support self-sustaining fish populations. All that could survive were tough, nonsport fish, and fishing success was completely dependent on stocking hatchery-raised channel catfish. The next giant leap forward for the Urban Fishing Program was going to change that.

MDC pitched the idea of improving these lakes for the benefit of both fish and anglers. All partners were receptive to the idea but saw challenges in coming up with funding for the work. Fortunately, there was a funding source in place that could provide a solution — the Community Assistance Program,



Anglers enjoy the improved fishing opportunities at O'Fallon Park Lake.

also known as CAP. These were 75/25 cost-share programs that would ease the financial pressure on urban fishing lake partners. Partners could fulfill their responsibilities with either money or in-kind services like construction or engineering expertise, as best suited their abilities.

With the help of these partners, MDC committed to funding a five-year program to complete significant renovations to urban fishing lakes. CAP agreements were negotiated, drafted, and signed with each partner, and work began. From 1996–2001, improvement projects deepened urban lakes, developed aeration systems, and installed structure to create fish habitat. Anglers would enjoy new amenities, too, such as improved parking and shoreline access, bank stabilization, and accessibility for persons with disabilities. Nearly \$2 million was used to transform these urban fishing lakes.

"After those renovations were completed, several lakes had good enough habitat that fish could naturally reproduce, which never really took place before," said Meneau. MDC biologists could now add sportfish like largemouth bass, bluegill, crappie, and redear sunfish. They watched as the fish took to the new habitat and began reproducing successfully.



1997 — O'Fallon Park Lake renovation

1993

The winter trout program continues to expand in the St. Louis area.

1996

With outside partner help, MDC commits to a five-year lake renovation program and begins work to improve urban lake habitat and angler experience.

1998

Some lakes begin to support and sustain sportfish populations.

Today

Urban anglers continue to enjoy close-to-home fishing opportunities.



Many urban lakes in Missouri offer excellent fishing access and plentiful fish populations.



Angler shows off a catfish at January-Wabash Park Lake in Ferguson.

The once sterile, ornamental city lakes had become living aquatic systems, offering new and unique fishing challenges for urban anglers.

The Power of Close to Home

For five decades, the Urban Fishing Program has delivered and improved on its promise to bring close-to-home fishing to the people. Urban residents have enthusiastically embraced the opportunity to fish in their own backyards. On a per-acre basis, use of these urban lakes is 15–20 times higher than even the most popular destination lakes like Truman Reservoir or Lake of the Ozarks.

Meneau has been an eye witness for two-thirds of the program's existence. Ironically, he describes himself as a small-town Wisconsin farm boy and not really an urban person at heart. He was even hesitant in the beginning to accept the position in a "big city" like St. Louis.

"When I saw what the urban fishing program meant to people and how much they love it, I quickly got turned around," he said.

"What it means to fish urban is a lot different than what it used to. And I'm really proud of that." ▲

Dan Zarlenga is MDC's media specialist for the St. Louis Region.

Celebrate Urban Fishing's Golden Anniversary

The Urban Fishing Program is turning 50 this year, and MDC is celebrating. Urban anglers can join the fun by doing what they love best — fishing close to home. Learn more with MDC's new Urban Fishing web page at bit.ly/2Fru9p6. You'll find links to information on all the urban fishing lakes. There are also tips and tools to help metro area anglers catch more fish.

MDC's got other special plans, especially for the St. Louis area, like stocking more 10-pound lunker trout this winter. There's a competition among metro area high school angling teams called the Fish St. Louis Cup (#FISHSTLCup), and this series of fishing challenges will culminate with tournament finals this spring.

MDC invites urban anglers to share photos of their catches throughout the year on the "brag board" by posting to their favorite social media account with the hashtag #MoUrbanFishing.

Look for other special updates and announcements during 2019 as urban fishing begins its next 50 years.





Peregrine falcons
can dive up to 200
miles per hour.

PHOTOGRAPHS BY
DAVID STONNER

the **MILLENNIAL**



FALCONS

PEREGRINE POPULATION TAKES FLIGHT, THANKS TO
CONSERVATION PARTNERSHIPS FORMED IN THE '80S AND '90S

by Bill Graham

A

dynamic bird once close to perishing from Missouri — the peregrine falcon — is back, thanks to people nurturing their nesting habits in high-rise realms. Cliffs and ledges are the falcon's natural haunts, places befit-

ting an aerodynamic raptor capable of snatching other birds in flight by diving at speeds well over 200 mph.

People gazing out from apartment and office windows in city skyscrapers can watch peregrines flying among the tall buildings, hunting food for their young, huddled in nests on windswept ledges and rooftops.

"I'm basically roommates with the falcons," said Michael Knight, whose apartment roof near the top of the 30-story Commerce Tower in downtown Kansas City also serves as a nest box site for MDC's falcon recovery effort. "They swoop up and down off our living room roof. I lean on the rail and drink coffee and watch them."

This urban falcon show owes its success to a partnership between businesses, building owners, and conservation professionals. For decades, businesses have allowed biologists to tend falcon nest boxes on skyscraper ledges or roofs. Power plant and industrial smokestacks also host nest boxes for a raptor that reduces nuisance birds.

"We're bringing an endangered species back, and we're also using the falcons as a control tool in locations where there happens to be a nuisance pigeon problem," said Joe DeBold, MDC urban wildlife biologist and falcon recovery leader.

"I admire their gracefulness in flight," DeBold said. "They can turn on a dime and ascend or descend in an instant."

History's Hints

Although Missouri's topography is not rich with the rocky cliffs that serve as the peregrine's natural nesting preference, the falcons do have a nesting history in our state.



Michael Knight watches peregrine falcons flying and often swerving close to the windows as they defend a nest near the top of the Commerce Tower skyscraper in downtown Kansas City. The falcon nest is atop the roof immediately over the ceiling where he is standing.



The falcon's title of world's fastest animal was briefly challenged when scientists discovered that the Dracula ant from the tropics of Asia and Africa can snap its jaws at more than 200 mph. But appendage movement is not the same as a bird soaring through the sky and shifting directions in an eyeblink.

St. Louis birder and author Otto Widmann cited nesting reports in his 1907 publication, *A Preliminary Catalog of the Birds of Missouri*. Most of Widmann's reports mentioned falcons nesting on rocky bluffs along the lower Missouri River or the Mississippi River. German Prince Maximilian of Wied, however, did note a peregrine falcon nest on a Missouri River bluff in northwest Missouri's Atchison County in 1833, and famed ornithologist John James Audubon also observed a pair of peregrine falcons near the river south of St. Joseph in 1843.

History's clues prompted DeBold and helpers to cruise the lower Missouri River during last spring's nesting season. They scanned the rocky bluffs for peregrine nests, falcons flying to defend a nest territory, or the whitewash from droppings left near a nest. Although biologists saw no nests, researchers continue to investigate whether conservation efforts help falcons return to wild natural nest sites on high river bluffs.

Partnerships for Peregrines

Peregrine restoration efforts began in upper Midwestern states in the late 1970s and continue today with programs coordinated by state, federal, and private wildlife entities.

In 1985, the year Missouri's recovery efforts began, Jeff Meshach was an intern at the nonprofit Raptor Rehabilitation and Propagation Project, which is now the World Bird Sanctuary (WBS) in Valley Park. Sanctuary staff placed young peregrines



Jeff Meshach (white hat) and crew check a peregrine falcon's nest atop the Ameren power plant in Portage Des Sioux. Businesses allow biologists to tend falcon nests on skyscraper ledges or roofs or power plant smokestacks. Those sites mimic the rocky cliff ledges that are the natural nesting sites for peregrine falcons.

in hacking boxes — staff-built nests where the hawks are cared for and observed — on the Pet Inc. building in downtown St. Louis, a place now called the Point 400 building.

“I was the person that got to be there every day,” said Meshach, who is now WBS deputy director. “I was the hack site attendant, watching and waiting and taking notes.”

Hacking young birds, watching, and waiting continued for six years. WBS staff hacked young falcons at eight sites in the St. Louis area under the leadership of the nonprofit's founder, the late Walter Crawford.

“In 1991, on the Southwestern Bell building in downtown St. Louis, we got a nesting pair and one chick, and we banded it,” Meshach said.

Also, in 1991, MDC initiated its peregrine recovery project by hacking young birds atop the Commerce Tower in Kansas City. In 1997, a peregrine pair successfully nested on a protruding roof near the top of the skyscraper. The roof originally covered a restaurant that's now converted into an apartment for Knight, the building's part owner.

“They were hoping the hacked falcons would imprint on the



site and come back and nest, and that's what they did,” DeBold said.

Today, several nest boxes are atop tall buildings or on smokestacks, and falcon pairs use them. In the past five years, biologists have banded 170 young falcons hatched in those nests, 91 birds in Kansas City and 79 in St. Louis.

“The only reason we can do this is our partnerships,” DeBold said. “Without our partners, the nest sites would not be available.”



MDC's Joe DeBold and Hugh Key, a USDA wildlife specialist, apply leg bands to young falcons hatched at a nest at Commerce Tower in Kansas City. The leg bands tell biologists where and when a falcon was hatched, allowing them to track their movements.

Working Among the Aeries

DeBold's work with peregrines follows a long line of experts like Meshach and MDC biologists who walked or crawled in high places to monitor falcon nests, called aeries. They put identification bands on the young birds, which in falcon lore are called eyases. Although things are now looking up, the fate of falcons was once uncertain.

Peregrine falcons have always faced challenges in Missouri, both natural — limited ideal nesting areas and predation at the talons of great horned owls — and manmade — persecution by farmers, who saw them as a threat to poultry, and egg theft by collectors. The biggest threat to the bird, however, was DDT, a commonly used 20th century pesticide that hindered nesting success by causing weak egg shells and resulted in the near extinction of the species in the continental U.S. After DDT was banned in the United States in 1972, conservationists, looking at the success of falconers in breeding and raising peregrines for hunting, began considering the idea of reintroduction.

Missouri's program has evolved to offering falcons nest boxes with gravel on the floor, an open side, and a roof for protection from weather. Other raptors rebounding from DDT, such as eagles and ospreys, build nests with sticks in trees. Falcons favor cliff ledges with depressions underlain by small rocks or pebbles.

"That's why the falcon has worked so well in urban areas," DeBold said. "We were able to emulate the cliffs and bluffs with a skyscraper or a smokestack. The rock inside the box is a selling point, they nest on that rock."

Falcons are not artistic nest architects, but they are devoted parents. Females sit on the eggs for much of the incubation period, but males help.

"Both birds sit on the eggs, and they both bring food to each other and both feed the young," DeBold said. "It's impressive how protective they are of their nests, the way they can become aggressive and fly so fast."

Helmets or hardhats are standard gear when biologists visit nests to weigh, measure, and place leg bands on young falcons. A few nesting females have hit Meshach's helmet as he worked with young birds. He marvels at how much speed they can quickly gain in a mere 15-foot dive.

"I know I use the word incredible a lot," he said. "But it sure fits the peregrine falcon."

Tracking Peregrine Travels

Banding helps biologists track peregrine falcons mingling across the midlands. The colors, letters, and numbers on metal leg bands are recorded. When biologists or birding enthusiasts can read the tags, falcon travels and origins are traced. For example, a banded female tending a nest in 2018 at Commerce Tower in Kansas City was hatched upriver at KCP&L's Iatan Power Plant smokestack north of Weston.

"We get to see where the birds go," DeBold said. "Many of our parents in Missouri that are banded are from Minneapolis. One of our birds fledged in Kansas City is documented in a nesting pair in downtown Dallas."

Banding also gives people from the businesses hosting a nest a chance to witness the scientific process.

“What I enjoy watching when we’re banding,” DeBold said, “is how this bird connects with people and people connect with this bird. There’s always a group of people who want to be at the banding, hold the birds, and take pictures. Just to see the smiles that come across people’s faces, and it’s all for conservation, that’s what I get out of it the most.”

Watching falcons is a popular pastime for office workers and residents in buildings where nests are near. At Commerce Tower, Knight gets photos via email or texts from friends who have spotted the birds in Kansas City. He and his son watch them daily. He’s seen the parents coming back three or four times a day with pigeons, ducks, or other birds to feed the young. Sometimes they will harass other raptors that wander into their nesting territory.

“I sometimes wake up in the morning and it’s raining feathers,” Knight said. “We’ve seen them dive bomb red-tailed hawks and turkey vultures.”

A Bright Future for Falcons

Peregrine falcons were removed from the federal endangered species list in 1999. But in the Midwest, Missouri joins states such as Illinois, Wisconsin, Minnesota, and Michigan that are still working to boost falcons off endangered or threatened status on state species lists. MDC’s goal is to remove them from endangered status in Missouri by 2020.

A key is adding nest boxes in high places near food sources. Peregrines eat a wide variety of birds. A historical name for peregrines was duck hawk because they will hunt waterfowl.

DeBold has added a nest box to a smokestack at Continental Cement and Green America Recycling in Hannibal on the Mississippi River. World Bird Sanctuary (WBS) has added nest

boxes in the St. Louis area, Meshach said. Also, a peregrine pair in 2018 began a nest on their own on a railroad bridge upstream of the Eads Bridge. WBS has also installed a nest box on a smokestack at New Madrid in southeast Missouri’s bootheel.

“We have high expectations for that site because it’s right on the Mississippi River and in the waterfowl flyway,” DeBold said. “It should be a good stopover for them.”

MDC is monitoring a falcon pair that has attempted a nest on a smokestack at Thomas Hill Reservoir in north central Missouri, and has placed a nest box on a smokestack at the State Line Generating Station in Joplin after a falcon pair was spotted nearby. Biologists from the U.S. Department of Agriculture’s Wildlife Services unit, frequent partners with MDC in the falcon recovery program, placed a nest box on a structure in St. Joseph.

Biologists will monitor nests this spring and band young birds. All the nesting falcons are wild birds, but biologists will watch to see if any pairs select natural habitats along river bluffs for a nest site, a symbol that the falcons have truly returned.

“We will get a wild nest someday,” DeBold said. ▲

Bill Graham is MDC’s Kansas City Region media specialist. He’s a lifelong hunter, angler, and camper. He also greatly enjoys hiking and photography in Missouri’s best wild places.

THIS BIRD CONNECTS WITH PEOPLE AND PEOPLE CONNECT WITH THIS BIRD.

Joe DeBold
**MDC URBAN WILDLIFE
BIOLOGIST**



Peregrine falcon pairs fiercely defend nests and nesting territories from other raptors. Both males and females bring food to the young.

WATCH AND REPORT PEREGRINES

People can watch peregrine falcon pairs tend nests, hatch eggs, and feed their young via streaming online video provided by MDC and conservation partners. For more information about peregrine falcons in Missouri, and for links to falcon nest cameras in the Kansas City and St. Louis areas, visit short.mdc.mo.gov/ZqA.

MDC welcomes the public’s help in spotting peregrine falcons nesting in the wild, on bridges, on smokestack catwalks, or on urban structures that do not have nest boxes provided by the falcon recovery program.

If activity by nesting falcons is spotted in eastern Missouri, call Jeff Meshach of the World Bird Sanctuary at 636-225-4390, ext. 1008, or jmeshach@worldbirdsantuary.org.

If nesting falcons are spotted in western Missouri, call Joe DeBold, MDC urban wildlife biologist, at 816-759-7305, ext. 1130, or Joe.DeBold@mdc.mo.gov.



▲ Critically imperiled in Missouri, a western foxsnake rests on a gravel road after eating its prey.

PHOTOGRAPH BY NOPPADOL PAOTHONG



Snake Thieves

POACHERS PUSH MISSOURI'S WILD REPTILES CLOSER TO THE
EDGE OF EXISTENCE

by **Bonnie Chasteen**

It's April. You're out scouting your favorite conservation area for turkey sign and morels. You spot some other folks carrying cloth bags and poking around a sunny, south-facing slope. They might be looking for morels, too.

Or they might be poachers.

"If they're carrying a cloth bag, and they're in these sunny, south-facing rocky slopes, they may be collecting snakes," said Jason Braunecker, MDC protection district supervisor.

Yes, he said, "collecting snakes."

Missouri State Herpetologist Jeff Briggler explained further. "It's the same with people who like to collect rare plants or rare birds — they're looking for exotic colors and unusual markings.

"It takes wild genes to produce new variations," Briggler said. "Some people will keep snakes for themselves, but there's a big market for wild snakes, amphibians, and reptiles worldwide."

That's the problem, Braunecker said. "Unlawful commercialization."



MDC agents have apprehended poachers collecting Missouri's colorful eastern milksnakes for illegal sale in states as far away as California.

The Illegal Pet Trade Hurts Everyone

In their March 3, 2016, *National Geographic* blog post, writers Susan Lieberman and Elizabeth Bennett summarized the “current crisis of the global illegal trade in wildlife for use as pets.”

“From Peruvian titi monkeys to Central Africa’s African gray parrots to Madagascar’s plowshare tortoises, the illegal global pet trade threatens countless species, sending many hurtling toward extinction,” they wrote.

The effects of this global illegal trade are felt here in Missouri, where 33 of the state’s 118 species of native amphibians and reptiles (collectively known as herptiles or herps) are listed as species of conservation concern. Several are state or federally endangered.

Braunecker sees the impact of the illegal pet trade on Missouri’s herps in his daily work. He reports that MDC’s Protection Division makes several cases annually from people selling native snakes or turtles taken from the wild.

“Craigslist and Facebook Marketplace sites as well as other herp forums are hot places for people to sell,” he said.

When people collect local wildlife to serve the demand for unusual or rare animals, they may earn a few quick bucks, but they’re essentially killing the goose that laid the golden egg.

“Unlawful commercialization of wildlife doesn’t just hurt the species,” Braunecker said. “It hurts the whole ecosystem, and it robs us of our natural heritage.”

All wildlife plays a role in nature. Most reptiles and amphibians are predators. Their job is to keep populations of prey animals like worms, bugs, and mice in balance. They also serve as food for other, larger predators like fish, birds, and mammals.

If we start thinking of herptiles — or any wildlife — as pets, collectibles, trophies, or commodities used for monetary gain, we’re guilty of commercializing them. This creates an unsustainable demand for wildlife that may already be at risk and can’t be replaced.

“Poaching these animals for the pet trade just pushes them a little closer toward the edge of existence,” Briggler said. “Even searching for them, like digging or turning over rocks, can destroy their habitat.”

Reducing or wiping out local herptile species can also further impoverish already-struggling local economies. Trying to



The alligator snapping turtle is critically imperiled in Missouri.



The prairie lizard often lives around country homes and rock gardens.

"Unlawful commercialization of wildlife doesn't just hurt the species, it hurts the whole ecosystem, and it **robs us of our natural heritage.**"

Jason Braunecker, MDC protection district supervisor

replace free ecosystem services like pest-control can prove astronomically expensive.

In addition, eliminating wildlife species could rob humanity of sources of important medical treatments. For example, scientists are studying how the Indonesian Komodo dragon's ability to avoid infection and recover from injuries could help people heal faster, with fewer risks of infection. Research continues into the use of snake venom in anti-cancer drugs. According to a report on the National Center for Biotechnology Information website, "There is a continuous development of new drugs from snake venom for ... anti-cancer agents."

Just One of Many Global Pressures

As a group, herptiles are declining worldwide. Poaching is just one of many pressures that are threatening them. Loss of habitat, construction, disease, invasive species, and fire are also driving declines.

Ironically, it's also the international pet trade that introduces nonnative species, and their diseases, from other continents into our local ecosystems (and vice versa).

In Florida, the Burmese python and the Nile monitor lizard are eating their way through that state's endangered species, according to Chris Sweeney in *Audubon* magazine.

So far, Missouri is too far north to permit the survival of tropical herptiles, but Briggler and other scientists worry that it's just a matter of time before Missouri sees the appearance of pathogens like the fungus *Batrachochytrium salamandrivorans*, which spread from Asia via the pet trade and is attacking salamanders in Europe.

How We Protect and Conserve Them

Missouri has a robust code of regulations that empowers MDC's conservation agents to address poachers, including those involved in the illegal pet trade, through enforcement action. Agents rely heavily on tips from ethical hobbyists, said Braunecker.

"Having eyes in local communities helps a lot," he said.

In addition to a statewide network of trained protection staff and local law enforcement agents, Missouri has a large collection of nearly 1,000 conservation and natural areas that provide the habitat our state's herps need to feed, breed, and thrive.

"High-quality natural communities ranging from desertlike glades to dense swamps conserved on designated Missouri



The rare dusty hog-nosed snake, recently rediscovered in the state, is found only in the sandy or loose prairie and savanna soils of southern Missouri.

natural areas provide important sites for many of our state's herptiles," said Mike Leahy, MDC natural community ecologist.

MDC's Outreach and Education Division, including publications, exhibits, and nature and interpretive centers, also helps educate citizens and stakeholders about the role and value of snakes and other herps in Missouri's natural communities.

"Spotting a prairie lizard sunning on a rock or hearing a chorus of spring peepers in the evening can make our day," said Kevin Lohraff, Runge Nature Center manager. "It is deeply satisfying work to help people understand that having healthy populations of amphibians and reptiles enriches our lives."

How You Can Help

Know Missouri's snakes

Being able to identify Missouri's native snakes and other herps not only enriches your knowledge and enjoyment of our state's natural history, it can also help you to spot illegal wildlife activity when you see it.

To help you learn more, care more, and do more for the Show-Me State's snakes, MDC offers several free, online, and for-sale publications. *A Guide to Missouri's Snakes* is free to Missouri residents. You can pick up a copy at most MDC nature and interpretive centers, or email pubstaff@mdc.mo.gov to order a copy. Browse more than 40 snake entries in MDC's online Field Guide at mdc.mo.gov/field-guide. *The Amphibians and Reptiles of Missouri*, a 368-page book by former Missouri State Herpetologist Tom R. Johnson, is available at most MDC nature and interpretive centers, or you can buy it online at mdcnatureshop.com.



The northern spring peeper needs access to ephemeral ponds.

If you see something, say something

You don't have to be outdoors to spot a possible snake-poaching situation. If you're browsing a social media site and see a Missouri native snake for sale, you may be viewing a poached animal. Take a quick screen grab of the image and email it to Jeff.Briggler@mdc.mo.gov. You can also report suspicious activity via Operation Game Thief (OGT). Just call 1-800-392-1111.

"Many of these (poaching) cases were made by people passing the information onto us through an OGT call," said Braunecker.

Ask tough questions

Braunecker advises asking sellers where their snakes come from. "I would suggest if you're going to purchase a snake, ensure you're not purchasing a snake taken from the wild. If it's a Missouri snake taken from the wild, the person should not be selling it," he said.

Don't collect! Capture, observe, and release

Missouri State Herpetologist Jeff Briggler helps agents identify the reptiles and amphibians they find in poaching cases. In fact, this duty makes up 15 to 20 percent of his workload. Although he's the state's most ardent advocate for all things scaly and slimy, he confessed he likes the idea of parents legally picking up common, harmless reptiles like the gartersnake. (See *Know the Code* on Page 27.)

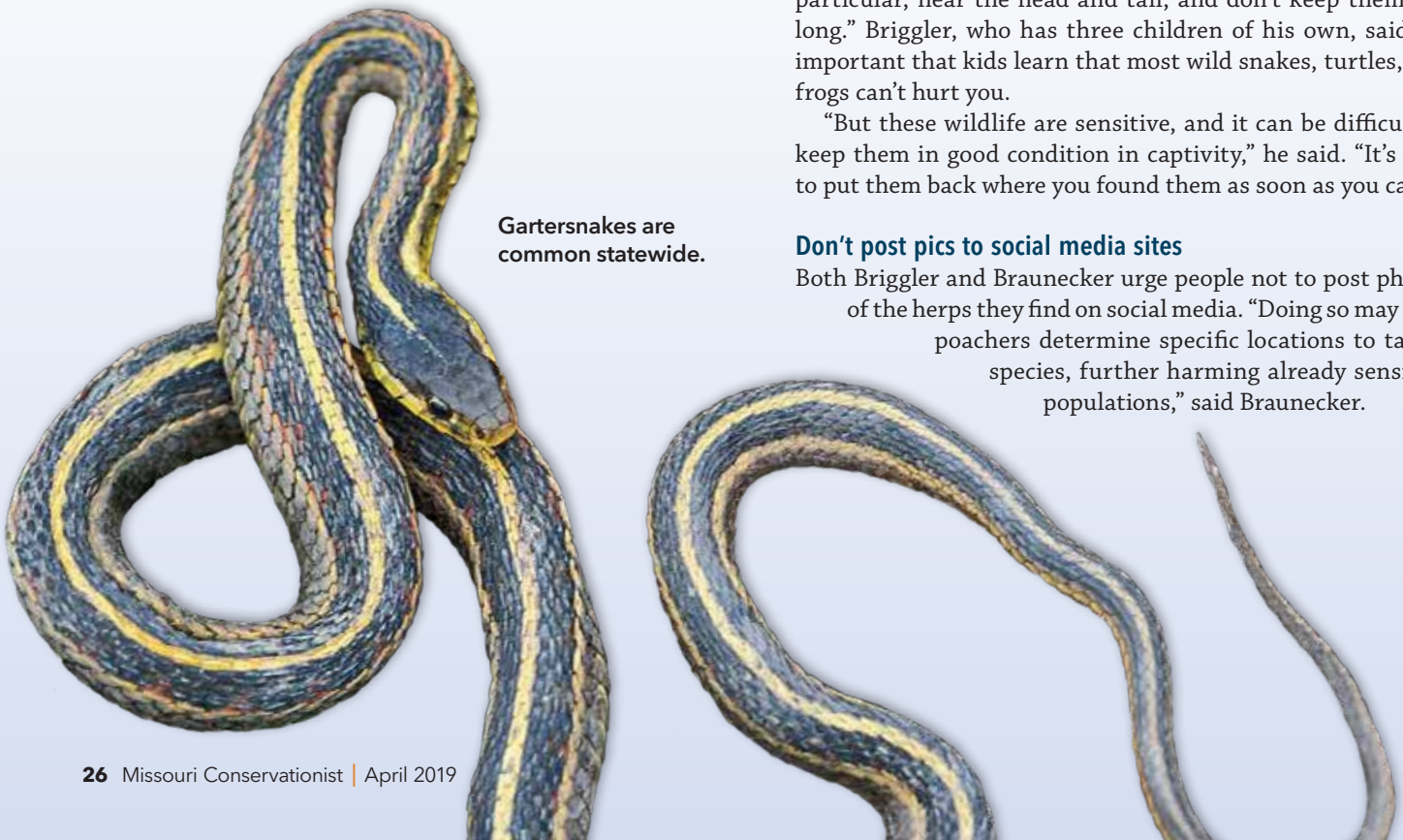
"Just handle them carefully," he said. "Support snakes, in particular, near the head and tail, and don't keep them too long." Briggler, who has three children of his own, said it's important that kids learn that most wild snakes, turtles, and frogs can't hurt you.

"But these wildlife are sensitive, and it can be difficult to keep them in good condition in captivity," he said. "It's best to put them back where you found them as soon as you can."

Don't post pics to social media sites

Both Briggler and Braunecker urge people not to post photos of the herps they find on social media. "Doing so may help poachers determine specific locations to target species, further harming already sensitive populations," said Braunecker.

Gartersnakes are common statewide.





Adding features like dry stacked stone walls and small fishless ponds to your landscape can provide habitat for a range of Missouri herptiles, including snakes, lizards, toads, frogs, and turtles.

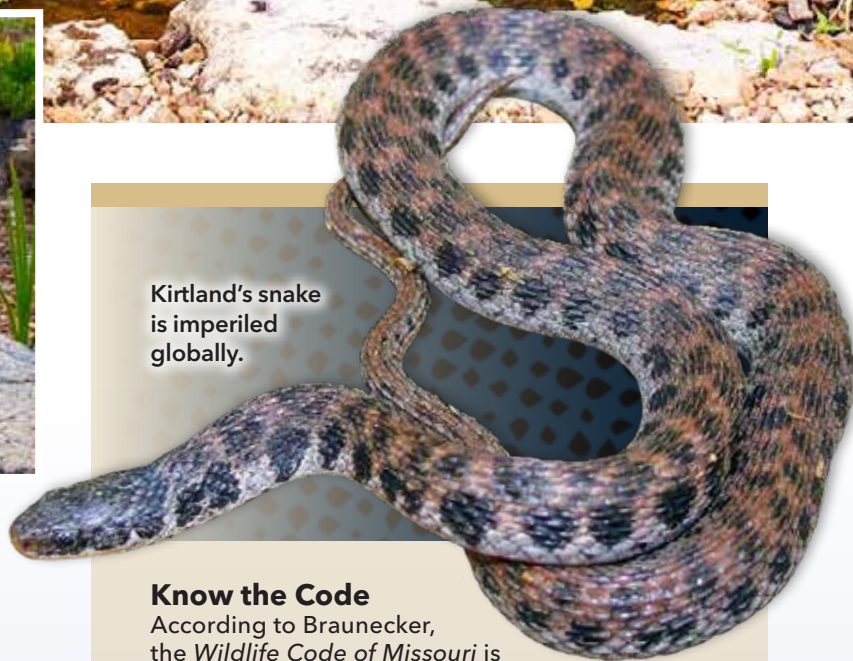
Make room for snakes on your land

In addition to poaching, disease, and persecution, loss of habitat is one of the top factors driving declines in the world's herp populations. If you own your own home or rural property, you can make a place for herps. Just create an out-of-the-way brush pile or stone wall where snakes, lizards, turtles, and toads can thrive. A small fishless pond will attract frogs, salamanders, and aquatic turtles. Soon you'll have fewer mice and insect pests, and your local area will have more native herptiles.

Support local prosecutors

Braunecker said that conservation agents working with local prosecutors are key in bringing poachers to justice, and he encourages people to support stiff penalties. "If people are illegally taking or killing snakes or other herps, please let your local conservation agent know so they can investigate and pursue charges through local prosecution," he said. ▲

Bonnie Chasteen is a Conservationist staff writer. She appreciates all snakes, but the slim, graceful northern rough greensnake is her favorite.



Kirtland's snake is imperiled globally.

Know the Code

According to Braunecker, the *Wildlife Code of Missouri* is a permissive code. "It allows citizens to keep up to five native species of herps except endangered species, species that are extremely rare, any venomous snake, and those species with established seasons, such as bullfrogs and snapping turtles," he said.

Also, he said, many conservation areas don't allow plant or animal collecting or digging of any sort, so check with the area manager before collecting species or disturbing habitat in any way. He said that visitors may collect mushrooms on conservation areas, but "they just can't sell them."

When does taking wildlife become poaching wildlife?

"When you take a protected species such as a dusty hog-nosed snake or keep more than five individuals of native herps allowed to be possessed by the *Wildlife Code*," Braunecker said.

Most importantly, if you barter, trade, sell, or transport outside state lines any live native Missouri species taken from the wild, you've broken the law.

Get Outside

in APRIL →

Ways to connect with nature



THREE-TOED BOX TURTLE



RUBY-THROATED HUMMINGBIRD

Who's Coming to Dinner?

With many birds — including phoebes, Baltimore orioles, ruby-throated hummingbirds, house wrens, and chimney swifts, to name a few — making their return flights to Missouri, you could have some hungry flocks on your hands. Get your bird feeders ready!

Give Turtles a Brake

Three-toed box turtles, ornate box turtles, and common snapping turtles are on the move! These species can often be seen crossing roads in Missouri this time of year in search of food, a mate, or a warm place to bask on cool spring days. If it is safe to do so, try to avoid them or move them to the side of the road in which they are traveling.

SOUTHEAST REGION

A Southeast Earth Day



Saturday, April 20 • 1-4 p.m.
Cape Girardeau Conservation Nature Center
2289 County Park Drive
Cape Girardeau, MO 63701
No registration required.
Call 573-290-5218 for more information.
All ages

Come celebrate Earth Day as we focus on the amazing plants, animals, and habitats Missouri's Southeast region has to offer. Walk the trail to answer trivia questions or to just enjoy a nice spring day. Stop by the classroom to make and take a fish-related craft. Enjoy a nature film in the auditorium, or sit and watch the birds at our bird-viewing area. There's something for everyone at the nature center.



Find more events
in your area at
mdc.mo.gov/events

Natural Events to See This Month

Here's what's going on in the natural world.



American white pelicans are migrating through Missouri



Spring turkey season begins

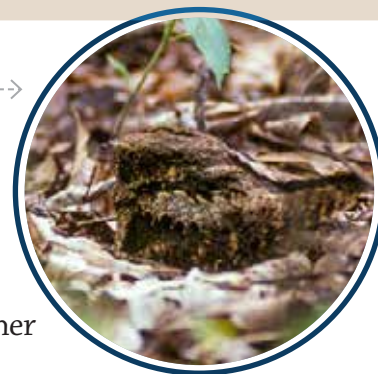


It's time to hunt morel mushrooms



Sounds of a Spring Night

Nature comes alive in the springtime, even at night. The eastern **whip-poor-will**, whose call sounds just like its name, can call hundreds of times a night. Though considered common summer residents, they are often heard but rarely seen.



ST. LOUIS REGION

Family Fishing

Saturday, April 27 • 8 a.m.-12 p.m.

Three Locations: O'Fallon Park Lake, Jefferson Lake — Forest Park, and Carondelet Park — Boathouse Lake

No registration required. Call 636-441-4554 for more information. All ages

Celebrate the 50th anniversary of the St. Louis Urban Fishing Program, the oldest and one of the largest in the USA. This family fishing event is open to the public. Events include special stockings, fishing instruction, and much more.



Plant a Tree

In honor of Arbor Day, why not plant a tree? You have two opportunities to celebrate the day in Missouri — Missouri State Arbor Day on April 5 and National Arbor Day on April 26. To learn more about planting tree seedlings, native trees, and more, visit short.mdc.mo.gov/ZNZ.



Wild black
cherry
begins
blooming



Crappie
are
spawning



ID What You See

ONLINE FIELD GUIDE: A-Z

Our mobile-friendly field guide is packed with information, images, and links to help you identify more than 1,000 Missouri animals, plants, and mushrooms. Find out what to look for right now, or search species to identify your latest finds. Compare similar species, find great places to see Missouri wildlife, and even share photos.



DRAGONFLY LARVAE

Species in the suborder Anisoptera

Dragonfly larvae are aquatic insects with large eyes, six legs, and an oval or rounded segmented abdomen.

Browse with any digital device at
mdc.mo.gov/field-guide

Places to Go

SOUTHWEST REGION

Huckleberry Ridge Conservation Area

Eponymous berries replaced by native nuts

by Larry Archer

✕ When it comes to huckleberries, people are more likely to find Huckleberry Finn or Huckleberry Hound as they are an honest-to-goodness huckleberry at Huckleberry Ridge Conservation Area (CA).

"I have not found any," said Cody Bailey, resource forester and Huckleberry Ridge CA manager, of the blueberry-like plant once thought to have existed in the area. "What I have found are Ozark chinquapin, a pretty rare species now."

A native Missouri chestnut species, the Ozark chinquapin was devastated by blight throughout the state, but specimens can still be found on the 2,106-acre Huckleberry Ridge CA in McDonald County. The area's network of multi-use trails cutting through its primarily wooded landscape provides visitors plenty of opportunity to find the rare tree, but its geography can make it a demanding search, Bailey said.

"There are a lot of steep hills that go up and down, so you're going to either need to be in good shape yourself or make sure your horse is in good shape," he said. "The terrain is really steep, but it's well worth it when you're getting a variety of hardwoods and a mixture of shortleaf pine habitat as you travel throughout the trails."



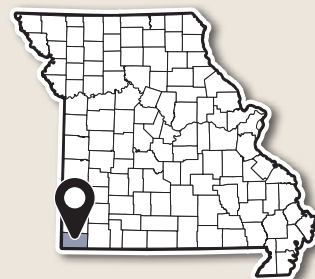
"I think the area as a whole is probably overlooked a bit. They don't realize how deep into nature you can get just going on the trails and being out in McDonald County in general. It's a lot of really great terrain, and most people don't realize how nice it is out there until they've been there for the first time, and then it quickly becomes one of their favorite places."

—Huckleberry Ridge CA Manager Cody Bailey

FLOWERING DOGWOOD: NOPPALDOL PAOTHONG;
OZARK CHINQUAPIN OAK: AJ HENDERSHOT



Spring brings out the blooms of the flowering dogwoods at Huckleberry Ridge CA. The rare Ozark chinquapin (lower right) also begins to flower in April.



HUCKLEBERRY RIDGE CONSERVATION AREA

consists of 2,106 acres in McDonald County.
From Pineville, take Route K east 4 miles.

N36° 35' 24.36" | W94° 19' 58.44"
short.mdc.mo.gov/ZGg 417-895-6880

WHAT TO DO WHEN YOU VISIT



Bird-Watching The eBird list of birds recorded at Huckleberry Ridge CA is available at short.mdc.mo.gov/ZGY.



Camping Primitive camping (no facilities provided) is allowed in designated areas.



Hiking Multi-use (biking, equestrian, and hiking) trails throughout the area.



Hunting Deer and turkey
Deer and turkey regulations are subject to annual changes. Please refer to the *Spring Turkey* or *Fall Deer and Turkey* booklets for current regulations.

Also **squirrel**

WHAT TO LOOK FOR WHEN YOU VISIT



Black bear



Red-eyed vireo



Ozark chinquapin



Goggle-Eye

Ambloplites rupestris

Status

Game fish also known as northern rock bass

Size

Length: 11-17 inches
Weight: 1-2 pounds, 12 ounces

Distribution

Northern and southwestern Ozarks



Did You Know?

This game fish was previously recognized as a single species known as rock bass. But two very close relatives — the shadow bass (*Ambloplites ariommus*) and Ozark bass (*Ambloplites constellatus*) — were recognized in Missouri. Although nearly identical in behavior, habitat, and life histories, shadow bass and Ozark bass differ from northern rock bass, and from each other, primarily by where they are found.

Goggle-eye are thicker-bodied than most other sunfish with a large mouth and very large eyes. They have a spiny dorsal fin with 12 spines broadly connected to a soft dorsal fin. Their color varies, but generally is dark brown to bronze above and often blotched along the sides. Goggle-eye's distinct pattern of dark spots arranged in parallel lines along its sides differentiates it from its closest relatives, the Ozark bass and shadow bass.

LIFE CYCLE

Goggle-eye can live seven to nine years in streams of northern Ozarks, tributaries of the middle Mississippi River, and portions of southwestern Ozarks. As they grow, they congregate around boulders, logs, and vegetation beds in deep pools. Goggle-eye are most active at dawn, dusk, and at night.

FOODS

Goggle-eye prey on crayfish and aquatic insects. Terrestrial insects and small fish are also occasionally on their menu.

Outdoor Calendar

❖ MISSOURI DEPARTMENT OF CONSERVATION ❖

FISHING

Black Bass

Impounded waters and non-Ozark streams:
Open all year

Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2019

Nongame Fish Gigging

Impounded Waters, sunrise to sunset:
Feb. 1–Sept. 14, 2019

Paddlefish

Statewide:

March 15–April 30, 2019

On the Mississippi River:

March 15–May 15, 2019

Sept. 15–Dec. 15, 2019

Trout Parks

Catch-and-Keep:

March 1–Oct. 31, 2019

Spring Turkey Season

Spring turkey hunting youth weekend is April 6 and 7, with the regular spring season running April 15

through May 5. Find detailed information in the *2019 Spring Turkey Hunting Regulations and Information* booklet, available where permits are sold and online at short.mdc.mo.gov/ZZf.



Free MO Hunting and MO Fishing Apps

MO Hunting makes it easy to buy permits, electronically notch them, and Telecheck your harvest. MO Fishing lets you buy permits, find great places to fish, and ID your catch. Get both in Android or iPhone platforms at short.mdc.mo.gov/Zi2.

HUNTING

Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2019

Coyote

Restrictions apply during April, spring turkey season, and firearms deer season.

Open all year

Crow

Nov. 1, 2018–March 3, 2019

Deer

Archery:

Sept. 15–Nov. 15, 2019

Nov. 27, 2019–Jan. 15, 2020

Firearms:

- ▶ Early Youth Portion (ages 6–15):
Nov. 2–3, 2019
- ▶ November Portion:
Nov. 16–26, 2019
- ▶ Late Youth Portion (ages 6–15):
Nov. 29–Dec. 1, 2019
- ▶ Antlerless Portion (open areas only):
Dec. 6–8, 2019
- ▶ Alternative Methods Portion:
Dec. 28, 2019–Jan. 7, 2020

Groundhog (woodchuck)

May 6–Dec. 15, 2019

Pheasant

Youth (ages 6–15):

Oct. 26–27, 2019

Regular:

Nov. 1, 2019–Jan. 15, 2020

Quail

Youth (ages 6–15):

Oct. 26–27, 2019

Regular:

Nov. 1, 2019–Jan. 15, 2020

Rabbit

Oct. 1, 2019–Feb. 15, 2020

Squirrel

May 25, 2019–Feb. 15, 2020

Turkey

Archery:

Sept. 15–Nov. 15, 2019

Nov. 27, 2019–Jan. 15, 2020

Firearms:

- ▶ Youth (ages 6–15): April 6–7, 2019
- ▶ Spring: April 15–May 5, 2019
- ▶ Fall: Oct. 1–31, 2019

Waterfowl

See the *Waterfowl Hunting Digest* or visit short.mdc.mo.gov/ZZx for more information.



For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at short.mdc.mo.gov/Zib. Current hunting, trapping, and fishing regulation booklets are available from local permit vendors or online at short.mdc.mo.gov/ZZf.



**Follow us
on Instagram**

@moconservation

The pearl crescent is active beginning this month. These pollinators are avid visitors of all that blooms. Get out and join them. It's a great time to head out on a wildflower walk. What wildflowers will you discover today?

📷 by **Noppadol Paothong**